

In the Claims:

1.-13. (Cancelled)

14. An uninterruptible power supply (UPS), comprising:

first and second input terminals configured for connection to an AC power line source;

first and second output terminals, one of the first and second output terminals being configured for connection to the first input terminal through an uninterrupted conductor;

a power factor correction (PFC) converter circuit configured to operate in an AC-powered mode as an AC to DC converter circuit, the PFC converter circuit having an input configured for connection across the first and second input terminals, a positive output terminal that produces a positive DC voltage with respect to the first input terminal, and a negative output terminal that produces a negative DC voltage with respect to the first input terminal;

a positive voltage rail connected to the positive output terminal;

a negative voltage rail connected to the negative output terminal;

a DC to AC converter circuit that has an input connected across the positive and negative voltage rails and that provides an AC output at the first and second output terminals; and

a connection circuit that connects a DC power source to the PFC converter circuit so that when the power line source voltage fails and the UPS is in a DC-powered mode, voltage produced by the DC power source is converted through the PFC converter circuit to supply the positive and negative voltage rails.

15. The UPS of claim 14, wherein the DC power source includes an electrical connection to the first input terminal.

16. An uninterruptible power supply (UPS) comprising:
first and second input terminals configured for connection to an AC power source;
first and second output terminals;
an uninterrupted connection from the first input terminal to the first output terminal;
a rectifier circuit, connected to the first and second input terminals, that provides positive and negative rectified voltage outputs;
a power factor correction (PFC) circuit having inputs connected to the positive and negative rectified voltage outputs and operative to provide positive and negative DC voltage outputs relative to the uninterrupted connection from the positive and negative rectified voltage outputs;
a connection circuit operative to connect a terminal of a DC power source to one of the inputs of the PFC circuit such that, when the power line source fails, a DC voltage produced by the DC power source is converted through the PFC circuit to provide the positive and negative DC voltage outputs; and
a DC to AC converter circuit that is connected to the positive and negative DC outputs and that provides an AC output at the output terminals.

17. The UPS of claim 16, wherein the DC power source is electrically connected to the uninterrupted connection.

18. An uninterruptible power supply (UPS) apparatus, comprising:
a power factor correcting converter circuit, configured to connect to an AC power source and to a DC power source, that generates a DC voltage from respective ones of the AC power source and the DC power source in respective AC powered and DC powered modes; and
an output circuit, coupled to the power factor correcting converter circuit, that generates an AC output from the DC voltage such that the AC output shares a common line with the AC power source.

19. An uninterruptible power supply (UPS) apparatus, comprising:
a power factor correcting converter circuit having a conductor configured to connect to an AC power source and to a DC power source, the power factor correcting converter circuit operative to generate both a positive DC voltage and a negative DC voltage with respect to voltage on the conductor from respective ones of the AC power source and the DC power source in respective AC powered and DC powered modes; and

an output circuit coupled to the power factor correcting converter circuit and operative to generate from the DC voltage an AC output with respect to the voltage on the conductor.

20. An uninterruptible power supply (UPS) apparatus, comprising:
a power factor correcting converter circuit, configured to connect to an AC power source and to a DC power source, that generates a DC output voltage from the AC power source in an AC powered mode and that generates the DC output voltage from the DC power source in a DC powered mode;

an inverter circuit, electrically coupled to the power factor correcting converter circuit, that generates an AC output voltage at an inverter output from the DC output voltage; and

a conductor connecting the AC power source and a terminal of the inverter output in the AC powered mode, and connecting the DC power source and the terminal of the inverter output in the DC powered mode.

21. An apparatus according to claim 20:
wherein the power factor correcting converter circuit produces the DC output voltage at a DC output port including first and second DC output nodes; and
wherein the power factor correcting converter circuit includes a first inductor electrically coupled to the first DC output node and a second inductor electrically coupled to the second DC output node, wherein the power factor correcting converter circuit in the AC powered mode increases and decreases current through the first and second inductors from the AC power source port responsive to a first input to generate

the DC output voltage, and wherein the power factor correcting converter circuit in the DC powered mode increases and decreases current through the first and second inductors from the DC power source responsive to a second input to generate the DC output voltage.

22. An apparatus according to claim 21, wherein the power factor correcting converter circuit selectively couples the first and second inductors to the AC power source and the DC power source responsive to a third input.

23. An apparatus according to claim 19, wherein the power factor correcting converter circuit switches respective shunt paths between respective ones of the first and second inductors and the conductor to charge a capacitance coupled to the DC output port in the AC powered mode, and wherein the power factor correcting converter circuit switches respective shunt paths between respective ones of the first and second inductors and the conductor to charge the capacitance at the DC output port in the DC powered mode.

24. A method of operating a power converter including an AC input port, a DC input port, a DC output port, a first inductor electrically coupled to a first DC output node of the DC output port, and a second inductor electrically coupled to a second DC output node of the DC output port, the method comprising:

increasing and decreasing current through the first and second inductors from an AC power source at the AC input port responsive to a first input to generate a DC output voltage at the DC output port from the AC power source and to control a power factor at the AC input port;

increasing and decreasing current through the first and second inductors from a DC power source at the DC input port responsive to a second input to generate a DC output voltage at the DC output port from the DC power source; and

generating an AC output voltage at an AC output port from the DC voltage generated at the DC output port from the AC power source while maintaining electrical continuity between the AC input port and a terminal the AC output port.

25. A method according to claim 24:

wherein increasing and decreasing current through the first and second inductors from an AC power source at the AC input port responsive to a first input comprises switching respective shunt paths between respective ones of the first and second inductors and the terminal of the AC output port responsive to a first control signal to charge a capacitance at the DC output port.